CLAIMS

1. A medical diagnostic system for imaging a target macromolecule structure, said system comprising:

means for generating a low level diagnostic x-ray beam;

amplitude modulation means operative with said generating means for providing amplitude modulation of the x-ray beam at a predetermined or empirically determined microwave frequency or range of sequential microwave frequencies;

detecting and imaging macromolecule structures which absorb said amplitude modulated x-ray beam at said predetermined or empirically determined microwave frequency or range of sequential frequencies.

2. A medical diagnostic system for imaging a target macromolecule structure, as per claim 1, wherein said detecting further comprises direct comparison with known frequencies of absorption of known target macromolecules.

3. A medical diagnostic system for imaging a target macromolecule structure, as per claim 2, wherein said known target entities contain or are comprised of macromolecules that include those involved in production of diseases.

4. A medical diagnostic system for imaging a target macromolecule structure, as per claim 1, wherein said target macromolecule structure comprises or contains an abnormal gene in an individual.

5. A medical diagnostic system for imaging a target macromolecule structure, as per claim 1, wherein said target macromolecule structure comprises Alzheimer plaques or tangles.

6. A medical diagnostic system for imaging a target macromolecule structure, as per claim 1, wherein said target macromolecule structure comprises cells containing herpes simplex virus or cells containing it.

7. A medical diagnostic system for imaging or detecting a target macromolecule structure, as per claim 1, wherein said target macromolecule structure comprises prions, AIDS virus and/or other viral diseases comprising any of: Ebola, Smallpox, SARS, hepatitis, encephalitis, meningitis, influenza, endocarditis/myocarditis, virus, herpes zoster, polio virus, measles virus, mumps virus, or rubella virus.

8. A medical diagnostic system for imaging or detecting a target macromolecule structure, as per claim 1, wherein said target macromolecule structure comprises prions.

9. A medical diagnostic system for imaging or detecting a target macromolecule structure, as per claim 1, wherein said target macromolecule structure comprises Ebola virus.

10. A medical diagnostic system for imaging or detecting a target macromolecule structure, as per claim 1, wherein said target macromolecule structure comprises Smallpox virus.

11. A medical diagnostic system for imaging or detecting a target macromolecule structure, as per claim 1, wherein said target macromolecule structure comprises corona viruses including those that produce severe acute respiratory syndrome (SARS) and/or respiratory syncitial virus.

12. A medical diagnostic system for imaging or detecting a target macromolecule structure, as per claim 1, wherein said target macromolecule structure comprises hepatitis virus.

13. A medical diagnostic system for imaging or detecting a target macromolecule structure, as per claim 1, wherein said target macromolecule structure comprises viruses causing encephalitis and/or meningitis, including arthropod borne viruses.

14. A medical diagnostic system for imaging or detecting a target macromolecule structure, as per claim 1, wherein said target macromolecule structure comprises influenza virus.

15. A medical diagnostic system for imaging or detecting a target macromolecule structure, as per claim 1, wherein said target macromolecule structure comprises viruses causing endocarditis/myocarditis.

16. A medical diagnostic system for imaging or detecting a target macromolecule structure, as per claim 1, wherein said target macromolecule structure comprises herpes zoster virus and /or polio virus.

17. A medical diagnostic system for imaging or detecting a target macromolecule structure, as per claim 1, wherein said target macromolecule structure comprises any of: measles virus, mumps virus, and rubella virus.

18. A medical diagnostic system for imaging or detecting a target macromolecule structure, as per claim 1, wherein said target macromolecule structure comprises mumps virus.

19. A medical diagnostic system for imaging or detecting a target macromolecule structure, as per claim 1, wherein said target macromolecule structure comprises rubella virus.

20. A medical diagnostic system for imaging a target macromolecule structure, as per claim 1, wherein said target macromolecule structure comprises transmissible spongiform encephalopathy (mad cow disease).

21. An object screening system for detecting a target macromolecule structure, said system comprising:

means for generating a low level diagnostic x-ray beam;

amplitude modulation means operative with said generating means for providing amplitude modulation of the x-ray beam at a predetermined microwave frequency or range of sequential microwave frequencies;

detecting and imaging macromolecule structures which absorb said amplitude modulated x-ray beam at said predetermined or empirically determined microwave frequency or range of sequential frequencies.

22. An object screening system for detecting a target macromolecule structure, as per claim 21, wherein said screened object comprises travel baggage.

23. An object screening system for detecting a target macromolecule structure, as per claim 21, wherein said screened object comprises travel passengers.

24. An object screening system for detecting a target macromolecule structure, as per claim 21, wherein said target macromolecule structure comprises strains of germs.

25. An object screening system for detecting a target macromolecule structure, as per claim 21, wherein said target macromolecule structure comprises concealed explosives.

26. An object screening and destroying system for detecting and destroying a target macromolecule structure, said system comprising:

means for generating a low level diagnostic x-ray beam;

amplitude modulation means operative with said generating means for providing amplitude modulation of the x-ray beam at a predetermined or empirically determined microwave frequency or range of sequential microwave frequencies;

detecting said macromolecule structures which absorb said amplitude modulated x-ray beam at said predetermined or empirically determined microwave frequency or range of sequential frequencies, and

applying a high level modulated x-ray beam at said predetermined or empirically determined microwave frequency or range of sequential frequencies to destroy said target macromolecule structure.

27. An object screening and destroying system for detecting and destroying a target macromolecule structure, as per claim 26, wherein said target macromolecule structure comprises pathogens in media entering other "clean" environments, including blood and blood products for transfusion.

28. A medical system for treating a pathological condition, said condition recognized as comprising one or more target macromolecule structures, said one or more target macromolecule structures absorbing radiation at one or more predetermined or empirically determined modulated microwave frequencies, said system comprising:

a CT scanner;

amplitude modulation means operative with said CT scanner for providing amplitude modulation of a CT source at a predetermined or empirically determined microwave frequency or range of sequential microwave frequencies, and

applying said modulated CT source to said target macromolecule structures to destroy said pathological condition.

29. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises thrombrotic occlusion of arteries causing heart attack and stroke.

30. A medical system for treating a pathological condition, as per claim 28, wherein said treating comprises selective destruction of viruses.

31. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises AIDS and other immune diseases.

32. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises Malaria.

33. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises Tuberculosis.

34. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises mycobacterial infections such as tuberculosis and leprosy.

35. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises fungal infections.

36. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises ricketsial diseases.

37. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises spirochete infection.

38. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises genetically engineered resistant organisms.

39. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises infection with microorganisms resistant to pharmaceutical therapy due to genetic changes in their constitution, such as the smallpox virus and anthrax bacillus.

40. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises atherosclerosis and focal atherosclerotic narrowing of arteries.

41. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises arthritis.

42. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises transmission of inherited diseases.

43. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises Huntington's Chorea.

44. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises Alzheimer's disease.

45. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises Parkinson's disease.

46. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises Jacob Creutzfeld disease.

47. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises storage diseases characterized by accumulation of abnormal or excessive material in body cells or tissues.

48. A medical system for treating a pathological condition, as per claim 28, wherein said target macromolecule structure comprises prions, AIDS virus and/or other viral diseases comprising any of: Ebola, Smallpox, SARS, hepatitis, encephalitis, meningitis, influenza, endocarditis/myocarditis, virus, herpes zoster, polio virus, measles virus, mumps virus, or rubella virus.

49. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises any of: autoimmune diseases, rheumatoid arthritis, diabetes, collagen vascular diseases, Guillain-Barre's disease, chronic inflammatory neuropathies, Crohn's disease, ulcerative colitis, asthma, allergic rhinitis, glomerulonephritis, allergic disseminated encephalomyelitis, post-viral encephalitis including Dawson's encephalitis, psoriasis, organ transplant rejection, graft-versus host disease, or thyroiditis.

50. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises Malaria and/or other parasitic diseases.

51. A medical system for treating a pathological condition, as per claim 28, wherein said pathological condition comprises leprosy.

52. A medical system for non-invasive surgery, said surgery of a target object comprising one or more target macromolecule structures, said one or more target macromolecule structures absorbing radiation at one or more predetermined or

empirically determined modulated microwave frequencies, said system comprising:

a CT scanner;

amplitude modulation means operative with said CT scanner for providing amplitude modulation of a CT source at a predetermined or empirically determined microwave frequency or range of sequential microwave frequencies, and

applying said modulated CT source to said target macromolecule structures to modify said target object.

53. A medical system for non-invasive surgery, said surgery of a target object comprising one or more target macromolecule structures, as per claim 52, said target object comprising selected herniated disc material in the spine.

54. A medical system for non-invasive surgery, said surgery of a target object comprising one or more target macromolecule structures, as per claim 52, said target object comprising bile acids around which gallstones develop.

55. A medical system for non-invasive surgery, said surgery of a target object comprising one or more target macromolecule structures, as per claim 52, said target object comprising gallstones.

56. A medical system for non-invasive surgery, said surgery of a target object comprising one or more target macromolecule structures, as per claim 52, said target object comprising tissue that is otherwise normal but which is pathologically excessive.

57. A medical system for non-invasive surgery, said surgery of a target object comprising one or more target macromolecule structures, as per claim 52, said target object comprising nerve entrapment syndromes.

58. A medical system for non-invasive surgery, said surgery of a target object comprising one or more target macromolecule structures, as per claim 52, said target object comprising overgrowth of bone by osteoblasts in the middle ear.

59. A medical system for non-invasive surgery, said surgery of a target object comprising one or more target macromolecule structures, as per claim 52, said target object comprising foci of abnormal cells producing epilepsy.

60. A medical system for non-invasive surgery, said surgery of a target object comprising one or more target macromolecule structures, as per claim 52, said target object comprising abnormal systems of cells producing non-focal epilepsy.

61. A medical system for non-invasive surgery, said surgery of a target object comprising one or more target macromolecule structures, as per claim 52, said target object comprising diffuse systems of cells of ectopic tissue such as glandular tissue (e.g. excess thyroid) and endometriosis, sarcoid, and xanthomata, or responsible for dyskinesias.

62. A medical system for non-invasive surgery, said surgery of a target object comprising one or more target macromolecule structures, as per claim 52, said target object comprising spinal pain tracts in cases of intractable pain.

63. A medical system for non-invasive surgery, said surgery of a target object comprising one or more target macromolecule structures, as per claim 52, said

system controlling cellular receptors, comprising any of: hypersensitive or increased numbers of cellular receptors as is seen in such conditions as tardive dyskinesia, said control consisting of elimination of a target object comprising one or more target macromolecule structures.

64. A medical system for regeneration of cells and tissues, said regeneration focusing on specific target macromolecule structures, said one or more target macromolecule structures absorbing radiation at one or more predetermined or empirically determined modulated microwave frequencies, said system comprising:

a CT scanner;

amplitude modulation means operative with said CT scanner for providing amplitude modulation of a CT source at a predetermined or empirically determined microwave frequency or range of sequential microwave frequencies, and

applying said modulated CT source to said target macromolecule structures to regenerate cells and tissues.

65. A medical system for regeneration of cells and tissues, said regeneration focusing on specific target macromolecule structures, as per claim 64, wherein said regenerated cells and tissue comprise the spinal cord.

66. A medical system for regeneration of cells and tissues, said regeneration focusing on specific target macromolecule structures, as per claim 65, wherein said spinal cord is regenerated by non-invasively destroying specific target macromolocules

as they exist in the macromolecular myelin sheath or at the stage of DNA transcription in the oligodendrocytes that produce them.

67. A medical system for regeneration of cells and tissues, said regeneration focusing on specific target macromolecule structures, as per claim 66, wherein when said spinal cord is a totally transected cord, a preliminary step is required in which inhibiting myelin or its contained macromolecules is performed by selecting them as target macromolecule structures.

68. A medical system for regeneration of cells and tissues, said regeneration focusing on specific target macromolecule structures, as per claim 64, wherein said regeneration of cells and tissues comprises cloning of an entire organism with its component tissues from a set of genes of a somatic differentiated cell.

69. A medical system for regeneration of cells and tissues, said regeneration focusing on specific target macromolecule structures, as per claim 64,wherein said regeneration of cells and tissues comprises production of differentiated cells and tissues from stem cells.

70. A medical system for regeneration of cells and tissues, said regeneration focusing on specific target macromolecule structures, as per claim 64,wherein said regeneration of cells and tissues comprises activation of somatic differentiated cells to produce transcripts from their genes.

71. A medical system for regeneration of cells and tissues, said regeneration focusing on specific target macromolecule structures, as per claim 64,wherein said

regeneration of cells and tissues comprises transformation of cells to acquire the capacity to produce specific products lost in degenerative diseases.

72. A medical system for regeneration of cells and tissues, said regeneration focusing on specific target macromolecule structures, as per claim 64, said system for treating degenerative diseases wherein resident cells in a degenerated region produce substances needed for physiological function of that area.

73. A medical system for regeneration of cells and tissues, said regeneration focusing on specific target macromolecule structures, as per claim 64,said system for treating Parkinson's disease wherein cells of the basal ganglia produce dopamine and subsume functions of degenerated cells.

74. A medical system for regeneration of cells and tissues, said regeneration focusing on specific target macromolecule structures, as per claim 64, said system for treatment for Alzheimer's disease wherein cells in the brain, particularly the prefrontal area, produce acetylcholine and other subsume functions of degenerated cells.

75. A medical system for regeneration of cells and tissues, said regeneration focusing on specific target macromolecule structures, as per claim 64, said system for treatment for stroke wherein cells are induced to differentia and replicate to replace cells lost by ischemia.

76. A medical diagnostic system for imaging or detecting a target macromolecule structure, said system comprising:

means for generating a low level diagnostic x-ray beam;

amplitude modulation means operative with said generating means for providing amplitude modulation of the x-ray beam at a predetermined or empirically determined microwave frequency or range of sequential microwave frequencies;

detecting and/or imaging macromolecule structures which absorb said amplitude modulated x-ray beam at said predetermined or empirically determined microwave frequency or range of sequential frequencies;

said predetermined or empirically determined microwave frequency or range of sequential frequencies determined by any of: absorption by irradiating DNA, RNA or protein microarrays, use of computed tomography to image the absorbing entity containing or comprising said macromolecular structure, or varying the frequency of modulation to determine those frequencies that are uniquely absorbed by the target macromolecular structure or entity containing or comprising it.